

Appln. No.: 10/776,822
Amendment Dated February 3, 2005
Reply to Office Action of November 9, 2004

NSG-229US

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) An end face light-emitting thyristor for emitting light from an end face thereof, comprising:

a first semiconductor layer of a first conductivity type, a second semiconductor layer of a second conductivity type, a third semiconductor layer of the first conductivity type, and a fourth semiconductor layer of the second conductivity type stacked in that order on a substrate of the first conductivity type,

an electrode provided in such a manner that a part thereof makes ohmic contact with the fourth semiconductor layer in the vicinity of substantially up to the end face for injecting current into the semiconductor layers, and

an insulating layer provided between the fourth semiconductor layer and the part of the electrode that is not made ohmic contact with the fourth semiconductor layer.

2. (Original) An end face light-emitting thyristor of claim 1, wherein an opening is formed in the part of the insulating layer faced to the end face, the electrode making ohmic contact with the fourth semiconductor layer via the opening.

3. (Original) A self-scanning light-emitting element array, comprising:

a structure in which a plurality of light-emitting elements each having a control electrode for controlling threshold voltage or current for light-emitting operation are arranged, the control electrodes of the light-emitting elements are connected to the control electrode of at least one light-emitting element located in the vicinity thereof via an interactive resistor, and a plurality of wiring to which voltage or current is applied are connected to electrodes for controlling the light emission of light-emitting elements, and

wherein the light-emitting element is an end face light-emitting thyristor as set forth in claim 1 or 2.

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4. (Original) A self-scanning light-emitting element array, comprising:

a structure in which a plurality of light-emitting elements each having a control electrode for controlling threshold voltage or current for light-emitting operation are arranged, the control electrodes for the light-emitting elements are connected to the control electrode of at least one light-emitting element located in the vicinity thereof via an electrically unidirectional element, and a plurality of wiring to which voltage or current is applied are connected to electrodes for controlling the light emission of light-emitting elements, and

wherein the light-emitting element is an end face light-emitting thyristor as set forth in claim 1 or 2.

5. (Currently Amended) A self-scanning light-emitting element array ~~An end face light-emitting thyristor~~ of claim 4, wherein the electrically unidirectional element is a diode.

6. (Original) A self-scanning light-emitting element array, comprising:

a self-scanning transfer element array having such a structure that a plurality of transfer elements each having a control electrode for controlling threshold voltage or current for transfer operation are arranged, the control electrodes of the transfer elements are connected to the control electrode of at least one transfer element located in the vicinity thereof via an interactive resistor, power-supply lines are connected to the transfer elements by electrical means, and clock lines are connected to the transfer elements, and

a light-emitting element array having such a structure that a plurality of light-emitting elements each having a control electrode for controlling threshold voltage or current are arranged, the control electrodes of the light-emitting element array are connected to the control electrodes of said transfer elements by electrical means, and lines for applying current for light emission of the light-emitting element are provided,

wherein the light-emitting element is an end face light-emitting thyristor as set forth in claim 1 or 2.

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7. (Currently Amended) A self-scanning light-emitting element array,
comprising:

a self-scanning transfer element array having such a structure that a plurality of transfer elements each having a control electrode for controlling threshold voltage or current for transfer operation are arranged, the control electrodes of the transfer elements are connected to the control electrode of at least one transfer element located in the vicinity thereof via an electrically unidirectional element, power-supply lines are connected to the transfer elements by electrical means, and clock lines are connected to the transfer elements, and

a light-emitting element array having such a structure that a plurality of light-emitting elements each having a control electrode for controlling threshold voltage or current are arranged, the control electrodes of the light-emitting element array are connected to the control electrodes of said transfer elements by electrical means, and lines for applying current for light emission of the light-emitting element are provided,

wherein the light-emitting element is an end face light-emitting thyristor as set forth in claim 1 or 2.

8. (Currently Amended) A self-scanning light-emitting element array ~~An end face light-emitting thyristor~~ of claim 7, wherein the electrically unidirectional element is a diode.